

Tennessee Pollution Prevention Partnership Success Story



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Process Waste & Scrap Reduction

The Member

Bridgestone/Firestone North American Tire, LLC, (BFNT) Warren County plant began manufacturing truck and bus tires in 1990. The plant employs approximately 1025 team members involved in producing thousands of truck and bus tires each day. BFNT company-wide has been dedicated to environmental excellence and continuous improvement as demonstrated by all of our North American tire plants achieving ISO 14001 certification by the year 2000. BFNT Warren is also a Charter Member of the EPA National Environmental Performance Track. We continue to look for opportunities to eliminate and reduce waste, save natural resources, and prevent pollution.

The Story

The manufacture of tires involves mixing raw materials into rubber compounds; cutting and forming the different compounds into several components, such as the tread, belts, inner liner, sidewalls, and beads; assembling these components as a "green" or uncured tire; and then curing the tire under heat and pressure.

All raw materials, tire components, green tires and cured tires are inspected and/or tested as appropriate to determine if the items meet all the required performance specifications. Some items are set-aside for Technical Service to review and determine if the material can be recycled back into the process. Most of the materials that do not meet specifications are identified as Process Waste & Scrap and are either recycled offsite or land filled. Some materials can be sold to manufacturers of other types of rubber products and offsite recycling is always the first choice for these off-specification materials.

Another step to reduce waste is to accurately track waste at the various departments. All Process

Waste & Scrap is weighed and recorded in a Waste Chart on a daily basis. This data is used to determine our status compared to the goals for each department and the overall goal for the plant. In addition to the department's effort to reach the waste reduction goals, a Waste Committee meets as necessary to help departments that are having trouble with waste & scrap. This committee is headed by a Technical Service engineer and includes plant personnel with the knowledge and experience to solve the problems. These personnel typically include floor personnel along with management.

The Success

Based on recommendations from the Waste Committee, equipment modifications done include improved calender fabric edge trimming, improved automated dimension checking capabilities, and new wire guiding equipment at the bead winders. Also, procedural changes include minimizing residual wire at the calender, modifying compound formulas to improve processing, and consolidating parts to reduce size changes.

The Pollution Prevented

In the last quarter of 2004, a new vendor purchased 128 tons of off-specification rubber that would have gone to a landfill.

Also, in 2004, we reduced Process Waste & Scrap by 25% compared to 2000 using normalized data. This is a reduction of 1,109 tons for 2004 and a total of 3,724 tons for 2001 through 2004. By reducing our Process Waste & Scrap, we were able to absorb increased raw material costs while maintaining our quality standards and cost competitiveness. This also represents 2,054 tons of materials that did not go into Tennessee's landfills for 2001 through 2004.

January 2005